In re Application of: Sascha Nick
Application No.: 09/934,000

Remarks

In the application, claims 1 through 6 and 20 are pending. No claims currently stand allowed.

The Office Action dated March 8, 2006, has been carefully considered. The Office Action rejects claims 1 through 3 and 6 under 35 U.S.C. § 103(a) as obvious in light of U.S. Patents 6,499,114 ("Almstead"), 4,965,513 ("Haynes"), and 5,608,657 ("Conway"). Claims 4 and 5 are rejected as obvious in light of Almstead, Haynes, Conway, and U.S. Patent 5,319,513 ("Lowenstein"). The Office Action does not address claim 20.

For claim 1, the cited art does not teach a "subsequent analysis of the information by diagnostic tools maintained elsewhere." Almstead describes a two-level diagnostics system, while claim 1 includes these four levels:

Level 1: "comparing the detected signals to a signal model maintained locally"

Level 2: "an initial analysis of the information by diagnostic tools maintained at the remote location"

Level 3: "a subsequent analysis of the information by diagnostic tools maintained elsewhere"

Level 4: "a final analysis by a team of humans aided by a collaborative environment"

Conway invokes an analysis by a team of human experts if the on-site technician cannot resolve the problem. However, Level 3 of the claim 1 is not taught anywhere in the cited art. Thus, claim 1 is patentable even over the combination of Almstead, Haynes, and Conway.

The subject matters of claims 4 and 5 are entirely novel with respect to the cited art. In claim 4, when a sensor fails ("identifying a failed sensor"), the signal model is regenerated without that sensor ("regenerating the signal model based on remaining sensors"). In claim 5, the place of a failed sensor in the signal model is replaced by a replacement signal ("the method including the step of generating a sensor replacement signal"). The cited art discusses the use of multiple sensors, but it does not discuss failing sensors. Instead, Lowenstein discusses bringing a filter off-line to protect electrical circuitry. Thus, Lowenstein teaches an intelligent analog to blowing a fuse but does not teach detecting that one of its own sensors has failed. Also, and in consequence of this, nowhere in the cited art is a signal model regenerated to account for a failed sensor.
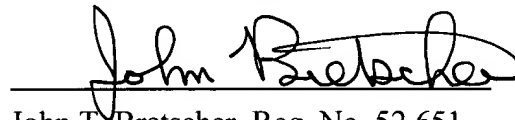
Claim 6 is also entirely novel over the cited art. In claim 6, a diagnostic is added to Level 2 (see example above) when an anomaly is diagnosed at Levels 3 or 4. Conway discloses a human technician contacting an expert to resolve a problem. However, Conway does not teach adding to the diagnostic tools, that is, enhancing the set of diagnostic tools in response to the resolution of a particular anomaly.

Claim 20 emphasizes that the Level 1 diagnosis can be strictly binary, that is to say, that Level 1 only detects an anomaly and leaves it up to the higher levels to determine the nature and extent of the anomaly. Almstead, on the other hand, performs a very complicated analysis at Level 1. The possibility for a binary Level 1 is supported by the decision box 508 of Figure 5a (Yes or No) and by paragraph [0044] of the present application. For this reason, and for the reasons given above with respect to claim 1, claim 20 is also patentable over the cited art.

Conclusion

The application is considered in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

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